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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/799,890 | 03/15/2004 | Jac-Wook Lee | Q78582 | 8349 |
| 23373 | 7590 | 09/22/2005 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | WACHSMAN, HAL D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2857 | |

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/799,890

Applicant(s)

LEE ET AL.

Examiner

Hal D. Wachsman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This application is in condition for allowance except for the following formal matters:

a) The Abstract is objected to because it is greater than 150 words in length and contains purported merits (i.e. "...can shorten time necessary...and improve accuracy.."). Appropriate correction is required.

b) The Brief Description of the Drawings is objected to because the description for Figure 1 does not indicate that this is prior art (Figure 1 is labeled as "PRIOR ART"). Also paragraph 18 on page 6 of the specification cites "capable of " which implies that the invention may or may not do what is described in that paragraph. Appropriate correction is required.

c) Claims 1-14 are objected to under 37 C.F.R. 1.75(a) for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Claim 1, line 19, cites "a predetermined calculation process" but does not particularly point out what constitutes this calculation process. This same type of problem also occurs in the last 2 lines of claim 8. Claim 2, line 2, cites "counter/comparator" however as written there is ambiguity with respect to whether this is referring to a counter and comparator as opposed to a counter or comparator. This same type of problem also occurs in claim 2, line 8, claim 3, line 3. Claim 10, lines 2-3, cites "the second counting the target number of the zero crossing points" which lacks clear antecedent basis. In addition, it appears that the word "of" may be missing between the words "counting" and "the". The examiner asks the applicant to better claim the limitations cited above. While the examiner understands the intentions of the

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applicant he feels confusion could be drawn from the limitations cited above.

Appropriate correction is required.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

2. The following references are cited as being art of general interest: "Automatic modulation recognition of digitally modulated signals" which disclose zero-crossing-interval histograms, Ishida et al. (6,598,004) which disclose a jitter detector with a histogram estimator, Apostolos et al. (4,166,980) which disclose a histogram data generator and Mueller (6,931,335) which discloses jitter histogram approximation.

3. Claims 1-7 are allowable over the prior art because the prior art does not disclose or suggest: a histogram information calculator for counting a number of detections of period information, which is a number of the digital values corresponding to a periodic signal, with calculation of histogram information of the period information for periodic signals and a frequency error calculator for detecting a difference between the histogram information and a reference histogram information of a signal frequency-synchronized with a electronic device, and calculating a frequency error value through a predetermined calculation process based on the difference.

Claims 8-14 are allowable over the prior art because the prior art does not disclose or suggest: counting a number of detections of period information, which is a

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number of the digital values corresponding to a periodic signal, with calculation of histogram information of the period information for periodic signals and detecting a difference between the histogram information and a reference histogram information of a signal frequency-synchronized with an electronic device, and calculating a frequency error value through a predetermined calculation process based on the difference.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D. Wachsman whose telephone number is 571-272-2225. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M..

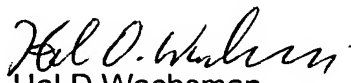
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Hal D Wachsman
Primary Examiner
Art Unit 2857

HW
September 17, 2005